

15 JUL 2005

From the INTERNATIONAL BUREAU

**PCT****NOTIFICATION OF TRANSMITTAL  
OF COPIES OF TRANSLATION  
OF THE INTERNATIONAL PRELIMINARY  
EXAMINATION REPORT**

(PCT Rule 72.2)

To:

NISHI, Yoshiyuki  
Nishi Patent Office  
Suite 211, 26-32, Nakahara 4-chome  
Isogo-ku  
Yokohama-shi, Kanagawa 235-0036  
JAPON

Date of mailing (day/month/year)

24 February 2005 (24.02.2005)

Applicant's or agent's file reference

YG2003-16PCT

International application No.

PCT/JP2003/007161

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05 June 2003 (05.06.2003)

Applicant

JAPAN SCIENCE AND TECHNOLOGY AGENCY et al

**IMPORTANT NOTIFICATION****1. Transmittal of the translation to the applicant.**

The International Bureau transmits herewith a copy of the English translation made by the International Bureau of the international preliminary examination report established by the International Preliminary Examining Authority.

**2. Transmittal of the copy of the translation to the elected Offices.**

The International Bureau notifies the applicant that copies of that translation have been transmitted to the following elected Offices requiring such translation:

AZ, CA, CH, CN, CO, EP, GH, KG, KP, KR, MK, MZ, RO, RU, TM

The following elected Offices, having waived the requirement for such a transmittal at this time, will receive copies of that translation from the International Bureau only upon their request:

AE, AG, AL, AM, AP, AT, AU, BA, BB, BG, BR, BY, BZ, CR, CU, CZ, DE, DK, DM, DZ, EA, EC, EE, ES, FI, GB, GD, GE, GM, HR, HU, ID, IL, IN, IS, JP, KE, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MN, MW, MX, NI, NO, NZ, OA, OM, PH, PL, PT, SC, SD, SE, SG, SK, SL, TJ, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW

**3. Reminder regarding translation into (one of) the official language(s) of the elected Office(s).**

The applicant is reminded that, where a translation of the international application must be furnished to an elected Office, that translation must contain a translation of any annexes to the international preliminary examination report.

It is the applicant's responsibility to prepare and furnish such translation directly to each elected Office concerned (Rule 74.1). See Volume II of the PCT Applicant's Guide for further details.

The International Bureau of WIPO  
34, chemin des Colombettes  
1211 Geneva 20, Switzerland

Facsimile No.+41 22 740 14 35

Authorized officer

Masashi Honda

Facsimile No.+41 22 338 70 10

Translation

INTERNATIONAL COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

10 Nov 2003 PCT/PTC

15 JUL 2005

PCT/JP2003/007161



Applicant's or agent's file reference YG2003-16PCT	<b>FOR FURTHER ACTION</b> See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)	
International application No. PCT/JP2003/007161	International filing date (day/month/year) 05 June 2003 (05.06.2003)	Priority date (day/month/year) 07 June 2002 (07.06.2002)
International Patent Classification (IPC) or national classification and IPC H01F 10/193, G02F 1/09, G02B 27/28		
Applicant JAPAN SCIENCE AND TECHNOLOGY AGENCY		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.

2. This REPORT consists of a total of 4 sheets, including this cover sheet.

☒ This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consist of a total of 3 sheets.

3. This report contains indications relating to the following items:

- I ☒ Basis of the report
- II ☐ Priority
- III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- IV ☐ Lack of unity of invention
- V ☒ Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI ☐ Certain documents cited
- VII ☐ Certain defects in the international application
- VIII ☐ Certain observations on the international application

Date of submission of the demand 26 December 2003 (26.12.2003)	Date of completion of this report 06 July 2004 (06.07.2004)
Name and mailing address of the IPEA/JP  Facsimile No.	Authorized officer  Telephone No.

# INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International Application No.

PCT/JP2003/007161

## I. Basis of the report

### 1. With regard to the elements of the international application:\*

- ☐ the international application as originally filed
- ☒ the description:  
 pages 1-21, as originally filed  
 pages \_\_\_\_\_, filed with the demand  
 pages \_\_\_\_\_, filed with the letter of \_\_\_\_\_
- ☒ the claims:  
 pages 2-5, 7-9, 11-13, as originally filed  
 pages \_\_\_\_\_, as amended (together with any statement under Article 19  
 pages \_\_\_\_\_, filed with the demand  
 pages 1, 6, 10, filed with the letter of 06 May 2004 (06.05.2004)
- ☒ the drawings:  
 pages 1/7-7/7, as originally filed  
 pages \_\_\_\_\_, filed with the demand  
 pages \_\_\_\_\_, filed with the letter of \_\_\_\_\_
- ☐ the sequence listing part of the description:  
 pages \_\_\_\_\_, as originally filed  
 pages \_\_\_\_\_, filed with the demand  
 pages \_\_\_\_\_, filed with the letter of \_\_\_\_\_

### 2. With regard to the language, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item. These elements were available or furnished to this Authority in the following language \_\_\_\_\_ which is:

- ☐ the language of a translation furnished for the purposes of international search (under Rule 23.1(b)).
- ☐ the language of publication of the international application (under Rule 48.3(b)).
- ☐ the language of the translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

### 3. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

### 4. ☐ The amendments have resulted in the cancellation of:

- ☐ the description, pages \_\_\_\_\_
- ☐ the claims, Nos. \_\_\_\_\_
- ☐ the drawings, sheets/fig \_\_\_\_\_

### 5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).\*\*

\* Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rule 70.16 and 70.17).

\*\* Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.

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International Application No.  
PCT/JP 03/07161

## V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

### 1. Statement

Novelty (N)	Claims		YES
	Claims	1-13	NO
Inventive step (IS)	Claims		YES
	Claims	1-13	NO
Industrial applicability (IA)	Claims	1-13	YES
	Claims		NO

### 2. Citations and explanations

Document 1: JP 2001-108951 A (Zaidan Hojin Rikogaku Shinkokai), 20 April 2001

Document 2: JP 3-11703 A (International Business Machines Corporation), 21 January 1991

Document 3: JP 49-17184 A (Siemens AG.), 15 February 1974

Claims 1 to 13

Document 1 ([claims], paragraphs [0004], [0013], [0019], [0023], [0024] and [0042]) cited in the international search report sets forth a semiconductor exhibiting ferromagnetic properties obtained by introducing a rare earth element into a group IV semiconductor, a group III-V semiconductor, or a group II-VI semiconductor. Document 1 also indicates that said semiconductor is manufactured using molecular beam epitaxy, and that the carrier concentration is controlled by doping. Document 2 ([claims], claim 1; page 2, lower right column, line 19 to page 3, upper left column, line 2; page 4, upper right column, lines 12 to 14; page 6, upper right column, lines 11 to 13) cited in the international search report sets forth a semiconductor exhibiting ferromagnetic properties obtained by introducing a rare earth element into a group IV semiconductor or a group III-V semiconductor. Document 2

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also indicates that said semiconductor is manufactured using the MBE method or the like, and that a plurality of rare earth elements are mixed together.

It is known that magnetic properties change according to composition, and it would be easy for a person skilled in the art to control magnetic properties by adjusting the concentration of dopant and the concentration of rare earth elements in document 1. Moreover, it would be easy for a person skilled in the art to adjust the concentration of the rare earth elements and to adjust the combination of rare earth elements in document 2, thereby controlling magnetic properties.

Document 3 (page 2, lower left column, line 11 to lower right column, line 3) cited in the international search report sets forth a feature wherein a combination of elements including rare earth elements is introduced into a group II-VI semiconductor.